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ROUTING AND RECORD SHEET

SUBJECT: (Optional)				
IHS Strategic Planning Working Groups				
FROM: [Redacted]		EXTENSION	NO. ORD 1144-81	
CS/PATG/ORD/DDS&T 606 Ames			DATE 14 October 1981	
TO: (Officer designation, room number, and building)	DATE		OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
	RECEIVED	FORWARDED		
1. [Redacted] IHSA/DDA 6D5317 Hqs.	10/15			
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ORD 1144-81

14 October 1981

MEMORANDUM FOR: [REDACTED] DDA/IHSA

FROM: [REDACTED], Chief Scientist/
Processing & Analysis Technology Group

SUBJECT: IHS Strategic Planning Working Groups

REFERENCE: Your Memorandum Dated 9 October (Attached)

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1. I received your invitation to participate in one of the IHS Strategic Planning Working Groups. Your charter is very challenging and a useful result is quite important for the Agency's future capabilities to carry out a host of vital functions. Therefore, I look forward to any opportunity to help bring about a successful result.

2. Nevertheless, I have grave misgivings about the efficacy of the approach which you seem to be following. The definitions, organization and staffing of the committees you have defined imply a reductionist approach. This is almost certain to disperse the threads of the architecture focus which is needed to glue the disparate needs of many Agency activities into a coherent whole.

3. Let me be specific. I cannot fathom the logic by which it makes sense to consider user productivity apart from terminals, graphics, databases, data distribution, and communications. How can one talk about data base languages apart from data base functionality? The overwhelming technical trend in the design of productive interactive systems is the unification of these functions so their implementation (and differentiation) are hidden from the user. We should not ask users to address these as separate needs, lest we repeat the design errors of the '60's and '70's.

4. The missing element in your approach, as I see it, is a functional data flow model of Agency information handling. At first consideration this might seem an impossibly large task, but there are approaches which would make it a reasonably

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tractable job. For example one could build the model out of generic submodels and assign user-oriented committees to define the parameters of submodel instances.

5. There are actually only three main information flow classes that need consideration. These are (1) production flow, (2) operational flow, and (3) administrative flow. Each of these has its own characteristic architecture and functional needs. Production flow is a mainly single direction flow leading from collection to final publication with the SAFE system dominating the lower-middle of the path. Operational flow is highly compartmented and mission oriented. These compartments have few interconnections. Administrative flow is highly dispersed and communications intensive. It has many interfaces to the other flows. These generalities can be elaborated at some length.

6. I believe that the area in which I can contribute the most is methodological advice related to the issues just described. My considerable experience leads me to believe that starting the definition of large, complex systems with relatively low level details has never succeeded in the past and will not succeed now. Therefore, I urge you to consider the alternative of starting at the top.

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Attachment:
Reference

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